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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,034	01/09/2001	Kwok Leung Lam	NSO-001.01	8283

25181 7590 04/18/2006

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EXAMINER
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OPSASNICK, MICHAEL N

ART UNIT	PAPER NUMBER
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2626

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/758,034	<b>Applicant(s)</b> LAM ET AL.	
	<b>Examiner</b> Michael N. Opsasnick	<b>Art Unit</b> 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2001.  
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1,2,4,5,7-18 is/are rejected.  
 7) ☒ Claim(s) 3 and 6 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 09 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The attempt to incorporate subject matter into this application by reference to related applications listed on page 19 of the specification is ineffective because the complete information (such as Patent Number or Publication Number or Application Number) is not entered. Correction is required.

### ***Claim Objections***

2. Claims 8,10 recites the limitation "the conditional probability distribution function" and "the keyword discriminative function" in lines 2-3 of the claim. There is insufficient antecedent basis for this limitation in the claim.

### ***Allowable Subject Matter***

3. Claims 3,6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

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As per dependent claims 3,6, the claim limitations pertaining to the particular equation for the score calculation is not explicitly taught by the prior art of record.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1,2,4,5,7-10 rejected under 35 U.S.C. 102(e) as being anticipated by Thiesson et al (6336108).

As per claim 1, Thiesson et al (6336108) teaches an information processing system performing a method for speech processing comprising receiving an utterance (as input utterance (Fig. 30, subblock 3030; and col. 7 lines 35-56);

“computing a score.....keyword” as computing a score for each HSBN (Fig. 12, Fig. 18) where each score consist of a discrete score (Fig. 19, Fig. 22) derive from a HMM Network (Fig.. 22, subblock 1008-1014; see Fig. 23A; and Fig. 31 → states  $X_1, X_2, \dots X_n$ );

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“indicating based on the score.....model of the keyword” as the HSBN that mark attributes of the acoustic observations (col. 7 line 38-41), wherein the HSBN is connected to the MBN’s (col. 7 lines 34-39), yet, the HSBN is not associated with an external hidden variable that is associated with the MBN (col. 7 lines 27-31);

As per claim 2, Thiesson et al (6336108) teaches:

“evaluating a state j of the model.....state k equal the state j” as performing an Expectation-Maximization for all of the HSBN’s (which are acoustic observations), for each MBN (col. 7 line 49 – col. 8 line 15; examiner is equating the claimed state j to the states of the HSBN’s, and the state k to the MBN parameters).

Claims 4,5,7-10 are processing system claims that implement the method of claims 1-2 and therefore claims 4,5,7-10 are similar in scope and content of claims 1,2; hence, system claims 4,5,7-10 are rejected under the same rationale as presented against claims 1-2 above.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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8. Claims 11-18 rejected under 35 U.S.C. 102(b) as being anticipated by Wu ("Subsyllable Based Discriminative Segmental Bayesian Network for Mandarin Speech Keyword Spotting; IEE 1997 Proc. for Vis. Image Signal Processing; Vol. 144, No. 2, April 1997, pp 65-71).

As per claims 11-18, Wu teaches maintaining syllables for a Mandarin speech keyword spotting system using context dependent subsyllables (abstract) using HMM for the speech signals (pg 67, col. 2 lines 45-57) in part using at least three subword units (pg 66, col. 1, first paragraph under "2 System Architecture"; and using the system to receive an utterance, compute scores based on the utterance and the models, and detecting the existence of a word based on the scores (as taking test utterances – pg 69, "6 Experimental Results"; training the models (pg 69, section 6.1), and performing and scoring the recognition results – (page 70, Table 1, Table 2, and pg 71, Table 3).

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see related art listed on the PTO-892 form.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Opsasnick, telephone number (571)272-7623, who is available Tuesday-Thursday, 9am-4pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Richemond Dorvil, can be reached at (571)272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mno  
4/15/06

  
Michael N. Opsasnick  
Examiner  
Art Unit 2626